

ABSTRACT OF THE DISCLOSURE

A method of crystallizing amorphous silicon includes forming an amorphous silicon film over a substrate, crystallizing the amorphous silicon film to form a polycrystalline silicon film using a sequential lateral solidification crystallization method, and performing a surface treatment to the polycrystalline silicon film, wherein the sequential lateral solidification crystallization method includes at least a first application of a first laser beam having a first energy density that completely melts a first uncrystallized portion of the amorphous silicon film and melts a first crystallized portion of the amorphous silicon film, and the surface treatment includes application of a second laser beam having a second energy density that partially melts an entire surface of the polycrystalline silicon film.